

REMARKS

The claims have been amended in order to more particularly point out, and distinctly claim the subject matter which the applicants regard as their invention. The applicants respectfully submit that no new matter has been added.

Independent Claim 1, as amended, is to a method of automatically marking an article which is transferred in one direction, by storing in advance a pattern for coloring an outer surface of the article with a plurality of coloring agents of respective colors different from each other, detecting a transfer speed of the article, supplying the coloring agents, supplying pressurized gas into a coloring agent supply source, and spouting a plurality of the coloring agents of respective specific amount, as a drop, to form spots on the outer surface of the article. The coloring agents are spouted from a plurality of separate and spaced nozzles, each nozzle having the coloring agent supply source connected therewith and a valve between the nozzle and the coloring agent supply source, toward the outer surface of the article according to the pattern in response to the detected transfer speed, where the coloring agents, as a drop, are spouted toward the outer surface of the article with the aid of bias of the supplied pressurized gas. Independent Claim 3, as amended, is to a device for automatically marking an article which is transferred in one direction, including storing means for storing a pattern for coloring an outer surface of the article with a plurality of coloring agents of respective colors different from each other, detecting means for detecting a transfer speed of the article. A plurality of separate and spaced nozzles are provided, each nozzle having a coloring agent supply source connected therewith for supplying the coloring agent to the corresponding nozzle and a valve provided between the nozzle and the coloring agent supply source, for spouting the coloring

agents of respective colors different from each other of respective specific amount, as a drop, to form spots on the outer surface of the article, toward the outer surface of the article. Control means are provided to make a plurality of the nozzles spout the coloring agent, as a drop, toward the outer surface of the article according to the pattern in response to the transfer speed of the article detected by the detecting means, and a pressurized gas supply source is connected to the plurality of the coloring agent supply sources for supplying pressurized gas to the plurality of the coloring agent supply sources, where when the valve is opened, the coloring agents existing in the nozzles are spouted, as a drop, toward the outer surface of the article with the aid of bias of the pressurized gas supplied from the pressurized gas supply source.

In the Office Action, Claims 1-8 were rejected as obvious under 35 U.S.C. § 103(a) in view of a combination of four references, Katzschner (U.S. 4,503,437); Gemelli (U.S. 3,068,838); Kobayashi (U.S. 6,328,488) and Richardson (U.S. 2,749,880). Reconsideration and removal of this rejection are respectfully requested in view of the present claim amendments and the following remarks.

The Office Action asserts that, with respect to Claims 1 and 8, Katzschner shows a method of automatically marking an article with a device in which the article is transferred in one direction by storing in advance a pattern for coloring an outer surface of the article with a coloring agent of respective colors different from each other, applying color to the cable by a print head, and spouting coloring agent of respective specific amount toward the outer surface of the article according to the pattern using a coating liquid jet for jetting the liquid and a detection means for measuring the moving speed of the cable and control means for controlling the coating liquid jet based on the speed

of the cable.

It is also asserted that the reference teaches a plurality of nozzles. While Katzschner does not teach multiple nozzles that eject different colors. Gemelli is cited as teaching an apparatus where the marking step is done by multiple nozzles arranged along a circumferential direction around the cable to apply a plurality of different colored inks to the wire, and it is alleged it would have been obvious to replace the nozzles of the Katzschner device by nozzles taught by Gemelli. Also, while the Katzschner and Gemelli combination, in addition, does not teaching each nozzle having a coloring agent supply source and a valve between the nozzle and supply source, Kobayashi is cited as teaching an apparatus for applying liquid to a surface with nozzles where the apparatus has a valve between the reservoir and the nozzles and where the valve controls opening and shutting of a flow path for the liquid, and it is alleged it would have been obvious to replace the Katzschner nozzles with the nozzle structure of Kobayashi.

Richardson is cited to teach marking cables where marking fluid is subjected to air pressure (gas) in the reservoir (coloring agent supply source) and it is alleged to be obvious to combine the various teachings because Richardson teaches it helps the fluid to flow from the reservoir to the nozzles. When the valve between the source and the nozzle is open, the pressure gas inherently biases the coloring agent to spout toward the outer surface of the electric cable.

The Traut reference, in addition, is cited in rejecting Claim 9, as showing a device for marking a cable with an ink jet printer (nozzles) and cutting the cable afterward, and it is alleged it would have been obvious to replace the marking unit of the Traut device with what the other references teach, because the other cited references teach their device is capable to mark the electric

wire.

The Katzschner reference was previously cited and discussed in the earlier response and uses an ink jet printer to mark a moving substrate. There are no separate and spaced nozzles with separate valves and coloring agent supply sources. The Gemelli reference, while using a plurality of circumferentially spaced nozzles, has inking members that rotate around a wire and form spaced stripes on the wire. The question is why one would use the spiral stripe forming Gemelli device in combination with Katzschner.

The Kobayashi device is cited to show a device where a valve is used between a reservoir and nozzles. The Kobayashi device, however, is an apparatus for processing a photographic light sensitive material with a processing solution that uses a jetting head similar to Katzschner, to jet a processing solution toward a photographic light sensitive material. Why would one look to such a field to apply teachings against the Katzschner-Gemelli wire marking system absent first reading Applicants' specification? In addition, separate and spaced nozzles are not found in Kobayashi, but rather a plurality of orifices (25a) of a nozzle are used with linearly arranged plural fine orifices (25a) controlled by the control valve (24).

Even with the previous three references combined, the Richardson reference is needed to allege obviousness of a system where marking fluid is subjected to pressurized air in a reservoir of coloring agent. Again, the Richardson system applies helical stripes to a cable and not spots. In Richardson, the annular troughs forming marking fluid reservoirs (10 and (11) have a single cover plate (12) and valves are not provided between each reservoir used as separate and spaced nozzles, as in the present claims.

Claims 1 and 3 have been further amended to recite that the nozzles are separate and spaced and that the drops form spots on the outer surface of the article.

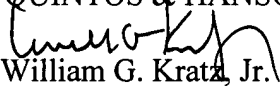
Applicants do not believe it reasonable to combine the diverse four references cited in alleging obviousness of the present claims. One cannot use Applicants's own specification to provide a basis for such a combination,

In view of the aforementioned amendments and accompanying remarks, Claims 1-9, as amended, are believed to be patentable and in condition for allowance, which action, at an early date, is requested.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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